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## 2. PURPOSE AND NEED FOR ACTION

- 2 The purpose of the proposed Project is, to the greatest extent reasonably possible, levitalize, enhance, and
- 3 restore, maintain and improve 3,527 feet 1,075 meters of the rapids in the Grand River in downtown
- 4 Grand Rapids from I-196 to Fulton Street. The savital author, enhancement, and maintenance goal of the
  - repide proposed Peroject is expected to facilitate incidental benefits, such as expanded public access and
- 6 use of the river, expanded recreational use of the river, improved aquatic habitat diversity, and improved
- 7 public health and safety. More specifically, the Project's purpose is to:
- 8 1. restore aquatic habitat diversity and suitability for native Great Lakes drainage fish and mussel 9 species, especially threatened, endangered, and special concern native species, in the Grand River 10 downstream of I-196 to Fulton Street;
- 11 2. reduce or eliminate public safety hazards generated by the existing hydraulic low-head dams; and
- install diversified hydraulic features that would improve habitat and create enhance recreation
  opportunities such as whitewater paddling, rafting, tubing, and angling in the Grand River.
- 14 The need for the proposed Peroject action arises from the degraded condition of the river, which is a
- 15 significant important natural resource for Grand Rapids and the state, and several recognized safety
- 16 problems associated with that degraded condition. Historic physical changes made to the Grand River as
- 17 it flows through downtown Grand Rapids, including construction of four low-head beautification dams
- and removal of natural substrate, have impacted native and listed species of fish and mussels, limited
- 19 public recreational activities, and have altered habitat. Studies have determined that the diversity and
- 20 productivity of listed species of fish and mussel community are currently much lower than what is
- 21 possible. For example, according to the Lake Sturgeon Habitat report completed by River Restoration in
- 22 2013, "The Grand River is one of only four rivers on the eastern shoreline of Lake Michigan where a
- 23 known remnant population of lake stargeon (Acipenser fulvescens) successfully reproduces (Smith,
- MDNR unpublished data). The availability of spawning and staging habitats in rivers is considered a
- 25 major factor limiting the recovery of lake sturgeon in Lake Michigan (Daugherty et. al, 2009, Auer 1999).
- 26 Furthermore, remnant sturgeon populations throughout the Great Lakes Basin have been found to be
- 27 genetically unique with the Grand River population likely included, and protection of each population is
- a priority of Federal State and Tribal agencies (Welsh et al. 2010 Holey et al. 2000). Recently numerous
- 29 sturgeon restoration projects have begun (Holtgren et al. 2007), however, very few have focused on
- 30 increasing spawning and staging habitat in Michigan."
- 31 Past development has significantly reduced habitat diversity in the river. Along the reach of the river that
- 32 courses through downtown Grand Rapids, the Grand River drops and improvement 18.5 feet, representing the
- 33 steepest grade anywhere along its entire length. Only one percent of the river habitat in the lower
- 34 peninsula of Michigan is comprised of rapid-type habitat, which is important to the life cycle of many
- 35 aquatic species. Rapid-type habitat is defined as a river system with a steep energy gradient, coarse bed
- substrates, and non-uniform distribution of instream velocities. Historic physical alterations to the Grand
- 37 River have altered habitat, impacted fish and mussel communities, and limited public recreational
- 38 opportunities. In particular, the four low-head beautification dams have altered sediment transport, flow
- 39 velocity, fish passage, and substrate suitability and have resulted in public safety hazards, including

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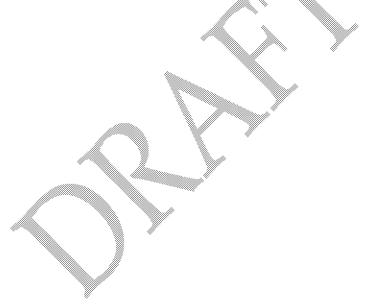
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- 1 multiple deaths. As a result, habitat diversity has been significantly reduced, and fish and mussel
- 2 community diversity and productivity are currently much lower than pre-development conditions.
- 3 If funded under PL \$3-566, the The proposed Pproject opportunities that could be realized include:
- Improved habitat diversity and suitability over 3,300 feet and 47 acres of the Grand River;
  - Increased Great Lakes native fish and mussel diversity and productivity;
- 6 Protection of threatened and endangered fish and mussel species including the lake sturgeon, river 7 redhorse, and snuffbox mussel;
- Creation of new recreational opportunities with improved, safe public access in an urbanized Great
  Lakes river corridor;
- Scour protection to the existing bridge structures; and
- Improved shoreline access.

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